

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application of:

Hisashi Tsukamoto et al.

Serial No: 10/666,860

Filed: September 17, 2003

For: ELECTRIC STORAGE BATTERY  
CONSTRUCTION AND METHOD OF  
MANUFACTURE

Art Unit: 1795

Examiner: LEE, Cynthia

MS Appeal Brief-Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

**REPLY BRIEF TO EXAMINER'S ANSWER**

This is a Reply to the Examiner's Answer mailed on February 3, 2010. The time for submission of this Reply Brief is determined by 37CFR41.41(a)(1). This section of the CFR provides the Applicant with two months from the date of the Examiner's Answer to submit a Reply Brief. Since April 3, 2010, falls on a weekend, the due date for this Reply Brief is April 5, 2010. Since this Reply Brief is being submitted on April 5, 2010, this Reply Brief is timely filed.

## VII. ARGUMENT

### 1. Rejection of Claims 20, 22-25, 67, and 78-82 under 35 USC §103(a) as being unpatentable over U.S. Patent No. 3,510,353 (McHenry).

#### CLAIM 20

Claim 20 stands rejected under 35 USC §103(a) as being obvious in view of U.S. Patent No. 3,510,353 (McHenry).

*McHenry does not teach or suggest every element of claim 20*

The Appeals Brief argues that McHenry does not teach or suggest providing electrical communication between the first electrode strip and the pin before winding together the first electrode strip and the second electrode strip. The Answer includes a section entitled “Response to Argument.” However, this section of the Answer does not point out where this teaching or suggestion can be found. In contrast, this section of the Answer supports the Applicant’s position. For instance, this section of the Answer states that “McHenry does not disclose that the first electrode and the second electrode are wound together after providing electrical communication between the first electrode and the pin.” This statement supports the Applicant’s argument.

*The modification supporting the rejection is associated with difficulty for one of ordinary skill*

The Appeals Brief notes that both the Supreme Court and the Board of Patent Appeals and Interferences are citing the principle that **difficulty for one of ordinary skill in the art to modify a known device to arrive at a claimed device is an indication of non-obviousness**. The Applicant then argues that there is such difficulty associated with the modification proposed in the Final Office Action and in the Answer. The “Response to Argument” section of the Answer does not respond to this argument.

### *Response to Argument Set Forth in the Answer*

The response in the Examiner's Answer appears based the case *In re Burhans* ("the cited caselaw") as cited in MPEP 2144.04(IV)(C). The text of MPEP2144.04(IV)(C) as it relates to *In re Burhans* is as follows:

#### **C. Changes in Sequence of Adding Ingredients**

...*In re Burhans*, 154 F.2d 690, 69 USPQ 330 (CCPA 1946) (selection of any order of performing process steps is *prima facie* obvious in the absence of new or unexpected results)...

The first paragraph of MPEP 2144.04(IV)(C) limits the application of the caselaw set forth in this section of the MPEP. For instance, the first paragraph of MPEP 2144.04(IV)(C) states the following:

As discussed in **MPEP § 2144**, if the facts in a prior legal decision are sufficiently similar to those in an application under examination, the examiner may use the rationale used by the court. Examples directed to various common practices which the court has held normally require only ordinary skill in the art and hence are considered routine expedients are discussed below. **If the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely solely on case law as the rationale to support an obviousness rejection.** (emphasis added)

The bolded sentence in this quotation limits of the use of the cited caselaw. Since the "Response to Argument" section of the Examiner's Answer did not address the Applicant's arguments and instead relied on the cited caselaw, the Applicant believes that the cited caselaw is currently the only rationale supporting the rejection.

#### **1. Applicant has not changed a "Sequence of Adding Ingredients"**

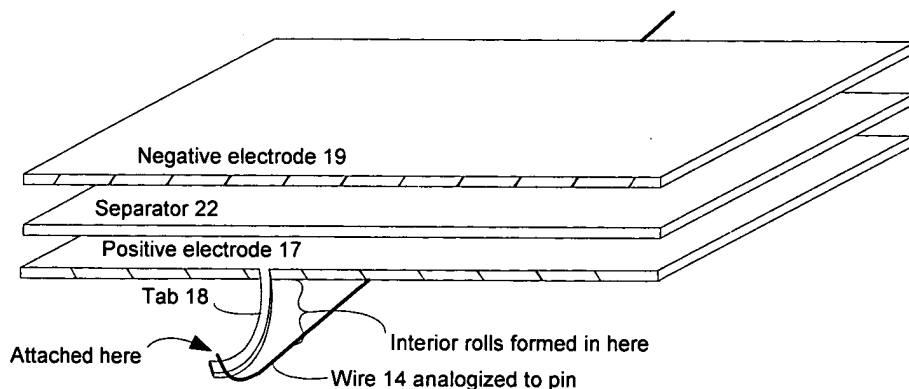
A review of this case law shows that it does not apply to the current facts for several different reasons. For instance, the heading of 2144.04(IV)(C) shows that this series of cases is directed to changes in the "**Sequence of Adding Ingredients.**" In fact, *In re Burhans* (see attached) is directed to the ingredients for preparing bread and flour. The current claims are directed to assembly of a battery but not to steps for adding ingredients. For this reason alone, this series of cases does not apply to the current facts. However, this is not even the strongest reason that the cited law does not apply here.

## 2. The cited caselaw is dependent on there being a suggestion of what the Applicant has done

In the cited caselaw, the cited art DID SUGGEST what that applicant had done. In order to see this, note that *In re Burhans* states that “(t)he cited references considered collectively clearly suggest doing the thing that the appellant has done” (69 USPQ at 332). As noted above, in the current facts, the Answer concedes that the cited art does not teach or suggest what the Applicant has done. Since the conclusion reaches in the *In re Burhans* case applies to situations where the cited art suggests what the applicant has done, but that is not the case here, the conclusion of the *In re Burhans* case does not apply to these facts.

## 3. McHenry’s Battery does not result when the sequence of steps is changed

In the cited law, changing the steps did not change the product. However, here if you change the steps as indicated by the Examiner, the disclosed battery does not result. For instance, the Examiner argues it would be obvious to attach the tab 18 from one of McHenry’s electrodes to the wire 14 before winding the electrodes around the pin. The drawing below illustrates what occurs when this is done. For instance, the drawing below shows the tab 18 attached to the wire before the electrodes are wound around the pin.

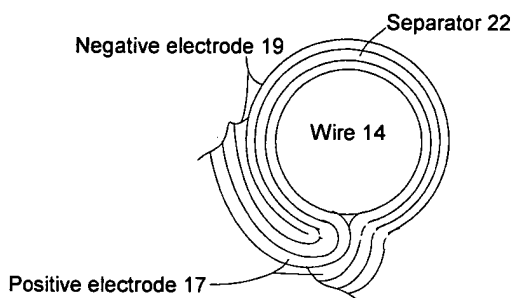


**Diagram A**

To prepare for creating McHenry’s electrode roll, we look at Figure 1 from McHenry to see what that electrode roll looks like. Figure 1 shows the electrodes wound around the pin several times between the tab 18 and the wire (the interior rolls) and also several times after the tab 18 (the exterior rolls). In the above Diagram A, the location of the interior rolls is labeled “Interior rolls formed in here.” McHenry teaches that the battery is formed by winding the

electrodes around the wire 14 (C2,L35-36). However, if the electrodes in the above diagram are wound around the wire 14, none of these interior rolls would result. Further, there is nothing in McHenry teaching how these interior rolls could be formed after attaching the tab 18 to the wire 14. In fact, this is the issue raised in the argument that a person of skill in the art would experience difficulty making the proposed modification.

Additionally, the following diagram B illustrates the structure that would result from winding the electrodes from the above diagram A around the wire 14. As evident from the below Diagram B, winding the electrodes of Diagram A around the wire results in a roll having an entirely different structure than the roll disclosed in McHenry.



**Diagram B**

For instance, in Diagram B, there are portions of the positive electrode 17 that are adjacent to another portion of the positive electrode 17 without an intervening portion of the negative electrode 19. There are also portions of the negative electrode 19 that are adjacent to one another without an intervening portion of the positive electrode 17. **Such a structure contradicts** traditional battery where positive electrodes alternate with negative electrodes. Further, **such a structure contradicts** the structure taught in McHenry which also alternates positive and negative electrodes. Accordingly, when the tab 18 is attached to the wire 14 before the electrode roll is formed as suggested by the Examiner, the battery of McHenry does not result.

In the caselaw being cited against the Applicant, re-arranging the steps as claimed resulted in the production of the same product disclosed in the cited art (flour/bread). In contrast, attaching McHenry's tab 18 and wire 14 before rolling McHenry's electrodes around the wire 18 does not result in the disclosed battery. Since the conclusion reached in the *In re Burhans* case

applies to situations where the Applicant re-arranges steps to achieve the same product, but that is not the case here, the conclusion of the *In re Burhans* case does not apply to these facts.

#### **4. A new result is achieved from the Applicant's method**

The cited caselaw sets forth an exception in its text. For instance, the portion of MPEP 2144.04(IV)(C) quoted above states that the cited caselaw applies “in the absence of new or unexpected results.” However, the recited method is associated with new and unexpected results. For instance, the Applicant's specification explains that the use of the madrel combined with creating electrical communication between the first electrode allows the pin to be used as a winding arbor during the winding of the electrodes. In using the pin as a winding arbor, the pin is rotated rather than the electrodes being wound around a stationary pin. However, since the portion of the electrode connected to the pin is thin and accordingly fragile, the mandrel is used to support the connection between the electrode and the pin during the winding process. (These teachings can be found in at least the second and third paragraphs of the Applicant's specification's “Summary” and also in the fourth paragraph of the Applicant's specification's “Detailed Description.”)

In view of the above, the claimed method allows the pin to be used as a winding arbor. There is nothing suggesting this result in the cited art. As a result, the use of the pin as a winding arbor is a **new** result. Further, as noted in the Applicant's specification, the connection between the pin and the electrode is weak enough that the Applicant uses a mandrel to support the connection enough to allow the pin to act as a mandrel. Without the Applicant's solution of using the mandrel for support, the weakness of the connection between pin and electrode would cause a person skilled in the art to refrain from using the pin as a winding arbor. Accordingly, the Applicant's ability to use the pin as a winding arbor is also unexpected. Since the claimed method provides both a new and unexpected result, the claimed method falls within the exception set forth in the cited caselaw. Since the claimed method falls within the exception set forth in the caselaw, the cited caselaw should not be applied to these facts.

#### **5. The Applicant has established criticality**

As noted above, MPEP 2144.04(IV)(C) limits the use of the cited caselaw. This section of the MPEP also provides the following:

If the applicant has demonstrated the criticality of a specific limitation, it would not be appropriate to rely **solely on case law** as the rationale to support an obviousness rejection. (Emphasis added)

The arguments set forth above establish the criticality needed to apply this quotation. To see this, note that use of the arbor to protect an electrical connection between the first electrode strip and the pin allows the pin to be used as a winding arbor when winding the electrodes around the pin. Accordingly, it is not proper for the cited caselaw to be the only rationale supporting this obviousness rejection.

The cited caselaw is currently the only rationale supporting this obviousness rejection. To see this, note that the Appeals brief advanced two particular arguments as to why claim 20 is patentable over the cited art. While, the Examiner's Answer includes a "Response to Argument" section, the Applicant does not believe that this portion of the Examiner's Answer responded to either of the Applicant's argument. In fact, portions of the "Response to Argument" section support the Applicant's argument as noted above. Instead of addressing the Applicant's arguments, the "Response to Argument" set forth the cited caselaw. As a result, cited caselaw appears to be the only current rationale supporting this obviousness rejection.

Since it is not proper for the cited caselaw to be the only rationale supporting this obviousness rejection, but the cited caselaw is the only rationale current supporting this rejection, the rejection should be withdrawn.

Respectfully submitted



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**C**

In re BURHANS

Court of Customs and Patent Appeals  
Appl. No. 5128

Decided Apr. 1, 1946

United States Patents Quarterly Headnotes

**PATENTS**

[1] Patentability--Aggregation or combination--In general

Contention, that references do not teach applicant's steps which are new in art and necessary to obtain desired result, has no merit in absence of proof in record that order of performing steps produces new and unexpected results.

**PATENTS**

Particular patents--Flour

Burhans, Enriched and Whole Wheat Flour and Bread, claims 2, 4, 5, 6, 8, and 10 of application refused.

Appeal from Board of Appeals of the Patent Office.

Application for patent of Merton E. Burhans, Serial No. 401,968; Patent Office Division 63. From decision rejecting claims 2, 4, 5, 6, 8, and 10, applicant appeals. Affirmed.

JOHN F. EAKINS, Chicago, Ill., for appellant.

W. W. COCHRAN (E. L. REYNOLDS of counsel) for the Commissioner of Patents.

O'CONNELL, Judge.

This is an appeal from the decision of the Board of Appeals of the United States Patent Office affirming the action of the Primary Examiner in rejecting in appellant's application for a patent claims 2 and 4 for a method of making flour, claims 5 and 6 for a method of making bread, and claims 8 and 10 for an article of manufacture of genuine whole wheat

flour. The foregoing claims were all rejected as lacking invention over the prior art and claims 5 and 6 were further rejected as aggregative. There were no claims allowed.

Claims 4, 6, and 10 are illustrative and sufficiently descriptive of the alleged invention. They read:

4. The method of making genuine whole wheat flour which consists in separating the germs from the wheat, manufacturing flour from the remaining constituents of the wheat, aging the flour, incorporating therein finely divided non-rancid wheat germ constituents, and thereafter impregnating the flour with carbon dioxide.

6. The method of making genuine whole wheat bread which consists in separating germ constituents from wheat, reducing the remaining constituents of the wheat to flour, aging the flour, incorporating in the aged flour finely divided non-rancid wheat germ constituents, thereafter impregnating the flour with carbon dioxide, making the flour into dough and baking the dough while the flour still retains a substantial amount of carbon dioxide.

10. As an article of manufacture, genuine whole wheat flour comprising finely divided non-rancid wheat germ constituents and the remaining constituents of the wheat in finely divided and aged condition, the whole mass of the flour being impregnated with carbon dioxide.

The references are:

Currie (Br.) 5,614 of 1828

Byrne 29,859 Sept. 4, 1860

Dietz 1,974,808 Sept. 25, 1934

Donk et al. 2,085,421 June 29, 1937

Wellingtonhoff 2,230,417 Feb. 4, 1941

In support of his position here, appellant states in his brief:

\*331 \* \* \* It is pertinent to note that the reason that white bread is so widely used notwithstanding its well-known deficiencies, is that flour to be used by bakers must be aged before it acquires good baking qualities. The aging of flour is an oxidation process

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which can be effected by allowing the air to work on the flour for an adequate period of time. It was found that flour could be aged much more rapidly by incorporating therein an oxidizing agent and flour thus aged is usually referred to as "patent" flour. The wheat germ contains a large proportion of oil and this oil has a great tendency to become rancid. To avoid this rancidity the milling art has from time immemorial separated the germ from the wheat and the resulting flour could then be aged. The development of rancidity is also an oxidation process and if the germ were ground up with the wheat kernel the aging process would inevitably result in full development of rancidity.

The present applicant has discovered that carbon dioxide has the quality of preventing overaging of flour and of preventing the development of rancidity. Consequently his method of making a true whole wheat flour or an enriched flour comprises the following steps in the order stated:

- a. separating the germs from the wheat kernels and the manufacture of flour from the rest of the kernel;
- b. aging the germless flour;
- c. incorporating in the aged germless flour finely divided non-rancid wheat germ constituents; and
- d. impregnating the flour with carbon dioxide. (Emphasis quoted)

The appealed claims have all been rejected on Donk et al., Wellinghoff and Dietz in view of Byrne or Currie.

Currie shows a method of preserving grain and other vegetable and animal substances by the application of carbon dioxide while the material is stored in air-tight vessels, or other proper receptacles. He thus prevents, according to his disclosure, the tendency of the grain to vegetate and greatly hinders the decomposition of other vegetable and animal matters.

Byrne discloses a process for treating the flour of wheat and other grain with carbon dioxide while the flour is inclosed in an ordinary flour bolting chest. In his specification, Byrne states-- It is a well known fact to dealers in flour, that the

flour of wheat when freshly ground is unfit for the use of bakers, as it makes a much smaller loaf than when it has acquired some age. It is also well known that too much age causes decomposition, the flour generates animalcules and becomes unfit for any use except starch manufacture. As a remedy for these evils, I treat freshly ground flour with carbonic acid gas. It renders fresh flour fit for immediate use and prevents flour at a far advanced age from decomposition.

In the patent to Dietz it is pointed out that "the introduction of the wheat germ, as such, into flour tends, by reason of the relatively large quantity of germ oil, to make the flour rancid and to affect its color and texture." Dietz describes a process for making flour by extracting the germ from the wheat, milling the residue into flour, extracting and activating the oil from the germ "to a high potency in vitamin D and the activated oil is then mixed with the residue of the germ in any desired proportion." The resultant mixture is then introduced in small quantities into flour prepared in any usual manner.

Donk et al. relates to processes in treating wheat germ so as to make it useful in the manufacture of bakery and other food products. The patentee separately grinds and treats the fresh wheat germ as released in the flour mill in the process of milling. It is then packaged in appropriate containers in an inert gas such as carbon dioxide. Subsequently the treated wheat germ is incorporated into bakers' mixture. To cure the deficiency in refined wheat flour as ordinarily used for bread, one of the principal objects of Donk et al. is "to make available for introduction into the ordinary bakers' mixture for bread an even larger proportion of wheat germ than is ordinarily in the wheat grain or berry."

Wellinghoff removes the oil from the wheat germ and the non-rancid residue is reintroduced into the flour stream for further milling with the flour.

Dietz, Wellinghoff and Donk et al. do not specifically describe the step of aging the flour, but it is re-

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ferred to in Byrne and each of the foregoing references contemplate that the flour would be aged prior to its use by the baker. The aging of flour is not only old in the art but it is also conventional as hereinbefore noted. In Dietz, Wellinghoff and Donk et al. the wheat germ is separately ground and treated to remove the rancid element in the germ and the non-rancid germ is thereafter incorporated in aged flour for the bakers' mixture. Donk et al. also shows that rancidity may be eliminated by storing the germ contents in carbon dioxide, and Byrne discloses \*332 that it is old to impregnate flour with carbon dioxide for the purpose not only of rendering freshly ground flour fit for immediate use by the baker but also of preserving the flour by the prevention of its decomposition.

The cited references considered collectively clearly suggest doing the thing that appellant has done in this case and the Primary Examiner and the Board of Appeals correctly decided that the methods and article defined in the appealed claims were not patentable over the art of record for the reason that what appellant has done would be obvious to anyone skilled in the art. See *In re Stover*, 32 C.C.P.A. (Patents) 823, 146 F.2d 299, 64 USPQ 186.

[1] Appellant contends that the references taken singly or together do not teach his characteristic four steps which are new in the art and which are necessary to obtain the desired result. There is no merit in the point here in the absence of any proof in the record that the order of performing the steps produces any new and unexpected results. See *In re Gibson*, 17 C.C.P.A. (Patents) 1090, 39 F.2d 975, 5 USPQ 230; *In re Lang et al.*, 25 C.C.P.A. (Patents) 1322, 97 F.2d 626, 38 USPQ 187; *In re McKee*, 23 C.C.P.A. (Patents) 1187, 83 F.2d 819, 29 USPQ 493.

In view of our conclusion it is unnecessary to discuss and pass upon the question of aggregation and the decision of the Board of Appeals is accordingly affirmed.

Cust. & Pat.App.

*In re Burhans*

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